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Q&A on the Budget With Clinton's Science Advisor

John Gibbons, the President's Science and Technology Advisor and Director of the Office of Science and Technology Policy (OSTP), spoke with SGR Editor Greenberg on May 10. Following is the text, transcribed and edited by SGR.

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SGR. *Is the budget outlook for research as grim as they say?*

Gibbons. We see through a glass darkly right now. If you talk about cuts from current dollars at, say, 20 percent over four years, and then you add inflation to that, the real buying power does, in fact, go way down. The first thing we have to do in the coming weeks is to make sure we're talking about these numbers realistically. The second is, we really have to get into the details. That's where the devil lies.

SGR. *Why "through a glass darkly"?*

Gibbons. It's called the cloudy crystal ball, where you can't really quite see what's going on inside. If you take, as I did last night, the Domenici committee staff draft [released the previous day by Senator Pete Domenici (R-New Mexico), Chairman of the Senate Budget Committee], it's very difficult to get to the kind of level of detail one needs to really assess what its implications are for the agencies.

SGR. *What do you see happening with NSF, for example? There seems to be a considerable amount of argument about the effects the budget resolutions would have on the Foundation.*

Gibbons. What we've been saying for two-and-a-half years now is that we're after fiscal discipline. Even the research budgets have to have a careful look, because no one should be given a free ticket toward deficit spending. On the other hand, the Science Foundation, in adjusting to cuts, clearly will simply have to raise its threshold of what kind of meritorious proposals make it over the barrier. They'll just turn down more research-grant applications.

But the fact is we're down now to less than a fourth of the meritorious applications making it through the system, and a lot of people are getting really discouraged about going into science because they see less and less opportunity to actually find funding, even if they have a very good idea. So, that worries me a bit. But I can't complain about any agency receiving very close attention to their expenditures and sharing some of the load. We did right here in OSTP. We took over a 25 percent hit when we first came into office. And we're doing some budget exercises now in which every agency is looking at lower real money in the outyears, and that does not exclude the Science Foundation.

SGR. *The White House budget planning shows that NSF and NIH in four or five years will fall substantially below*

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GOP Plan Favors Science, Cuts Heavily Into Technology

Slow shrinkage for science and catastrophic cuts for technology were the key proposals for research policy as the House and Senate Budget Committees approved resolutions last week for clear-cutting vast sectors of the federal government.

The plans, aimed at a balanced budget by the year 2002, differed in details, but were similar in their slashing assaults on federal spending. Both called for terminating the Department of Commerce and its fast-growing industrial-technology programs, while the House version would also abolish the Departments of Energy and Education. Both called for eliminating hundreds of federal programs and agencies, including the Congressional Office of Technology Assessment, the National Biological Service, and the Pentagon's

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In Brief

Cancelled: Plans for consolidating most of the FDA's sprawling operations on a single campus in Montgomery County, Md., near Washington. Approved when Democrats reigned, the first installment for the project, $228 million, was withdrawn last week by House and Senate appropriations conferees.

Two years after Congress directed NIH to establish the position of Associate Director for Behavioral and Social Sciences Research, the post has been filled. The winner is Norman B. Anderson, PhD, Associate Professor of Psychiatry and Psychology, Duke University. The behavioral crowd has long muttered that NIH Director Varmus cares little for their kind of research—a charge Varmus denies.

Even with federal budgets falling, new programs pop up. NSF has just announced the establishment of an Institute for Science Education at the University of Wisconsin-Madison, with $2 million a year for five years. DOE, though rapidly condensing itself just one step ahead of Congressional terminators, will provide up to $6 million over the next two years for a new Nuclear Safety and Environmental Research Center near Chernobyl.

DOE's five-year staff reduction plan calls for eliminating 3800, or nearly 28 percent, of the Department's jobs over the next five years. Meanwhile, the Department of Health and Human Services last week announced it will eliminate 2400 jobs, of which perhaps 1000 could be at NIH.

Scientific Sexism Update: They're backsliding at the National Academy of Sciences. In 1994, the old boys elected 9 women in a class of 60 new members. This year, only 6 were among the 60 chosen for "one of the highest honors that can be accorded a US scientist or engineer." Membership totals 1733—of whom 93 are women.

. . . Budget Resolutions Reflect the Mood of Congress

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industrial-technology program. Others would be reduced to non-viable scale.

Republican leaders were jubilant, properly claiming that they were on the way to fulfilling their pledges to whack down the size of the federal government. "We have kept our word and met the challenge," Chairman John Kasich (R-Ohio) said as he released the House Budget Committee's resolution. Democrats were correspondingly glum. Addressing the effects on major chunks of the federal R&D budget, Rep. George Brown (D-Calif.), the senior Democrat on the House Science Committee, said that by the year 2000, the proposed budget would cut spending by nearly 35 percent.

Presented in separate and somewhat differing versions by the House and Senate Budget Committees, the resolutions establish overall ceilings for federal appropriations in the coming fiscal year, but are merely advisory when it comes to distributing the money among federal programs. A death warrant from the Budget Committees is not necessarily fatal, but is surely not good news.

The fiscal 1996 ceilings in the resolutions are low in comparison to the Clinton Administration's trimmed figure of $1.626 trillion. The House resolution calls for $1.587 trillion, while the Senate comes in at $1.574 trillion. Over the seven-year span of the budget plans, federal spending would fall at least $1 trillion below Clinton's projections.

The basic message in these incomprehensible numbers is that the new Republican majorities in Congress are indeed keen for fiscal blood. The details will be filled by the Appropriations subcommittees and full committees in both houses and then in floor debate. Presidential vetoes are increasingly talked about in cases of severe budget deprivation. The final outcome is months off and uncertain in the fine details. But in terms of deciding the fate of individual agencies and programs, the grand designs of the Budget Committees, though not decisive, are influential in Congressional decision making.

Moreover, the resolutions are in harmony with the budget-slashing mood of the Republican majorities. And if changes are to be made in the spending plans, the greater likelihood is deeper cuts—which some members have already vowed to seek.

Under the proposals, NASA would lose money, but the Space Station budget would remain intact. The budgets of the National Science Foundation and the National Institutes of Health would be cut 5-10 percent next year and then stay more or less level for the next six years. NIH has been passing the word that its already stretched budget would decline by a billion or two under the budget resolutions.

An essential point to register is that the budget figures in the House and Senate resolutions do not take inflation into account. Thus, in addition to the declining "nominal" figures, as they are called, steady funding means steady loss of purchasing power.

Even Defense took a licking in the budget resolutions, with the House version holding the Pentagon's annual budget authority steady at $269 billion through 2002, while the Senate resolution allows for a minor increase.

The vaporous quality of the numbers and the uncertain political atmosphere in which they swirl were evident at a budget briefing held on May 11 by Rep. Robert Walker (R-Pa.), Chairman of the House Science Committee and Vice Chairman of the Budget Committee.

Walker, who has a penchant for putting a bright interpretation on dim numbers, has cast himself as a strong friend of basic research and an exterminator of what he deems misguided government spending on R&D partnerships with industry. To the puzzlement of some, he is personally dedicated to the promotion of research on hydrogen as fuel, and his bill for this purpose, authorizing $100 million in federal funding, was just passed by the House. No conflict of values, says Walker, insisting that much basic research remains to be done on hydrogen.

"As this budget was constructed," Walker said in a prepared statement, "science was regarded as an integral part of the US economy. The recommendations in this budget maintain a robust science policy providing for the fundamental science base we need to move forward.

"Basic research," Walker continued, "is protected in all areas of the science budget. The National Science Foundation will continue to grow. In fact," he went on, "in Fiscal Year 2000, the NSF budget will be $3.3 billion."

The difficulty with that cheerful report is that the NSF budget for the present fiscal year, 1995, is $3.26 billion, and the Clinton Administration is proposing $3.36 billion for FY 1996. Walker did not explain how the attainment of $3.3 billion over the next five years can properly be described as growth. A chart, distributed by his staff, added to the confusion by showing that, under the budget resolution, spending for "Fundamental science/basic research," mainly in NSF and NASA, would decline from $7.092 billion in 1995 to $6.775 billion in the year 2000—without inflation taken into consideration.

In regard to NSF, Walker explained that growth would

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. . . The Numbers for NSF Don't Seem to Add Up

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proceed at an annual 3 percent pace, "with the exclusion of social, behavioral and economic studies and the Critical Technologies Institute"—an NSF-funded RAND Corporation appendage that works for the White House Office of Science and Technology Policy.

A question and answer period with the Chairman contributed little to arithmetical enlightenment or any other kind. Asked whether the claimed annual increase of 3 percent in NSF funding took account of inflation, Walker replied:

"Everything that is in this budget assumes a 1995 baseline of real spending. We have, in fact, gotten away from the idea that we have budget presentations in this town that are based upon the automatic pilot of federal government spending. And so everything that you see here is based upon actual 1995 spending figures. And we think that's the right way to proceed. When most people sit down and do their budgeting, they look at what they've actually spent, and then they decide that the things above are an increase and the things below are a decrease. And so, everything that I'm talking to you about today is based upon the 1995 spending figures."

The questioner persisted: "Then inflation is not factored in?"

Walker responded: "There are not inflation figures in all of this. One of the advantages of going to a balanced budget is the fact that you get far less inflation, according to the economists who look at it. And one of the advantages of being fiscally responsible is that shouldn't be as large a factor. But there will have to be some adjustments within the departments and agencies in order to deal with the reality of changing economic circumstances. But we have done all of our budgeting, not only in this area, but everywhere else in the budget, based upon real spending figures from 1995."

Another question: "Why were the social, behavioral, and economic studies excluded from the 3 percent increases at NSF?"

To which Walker replied: "In large part, we think that's an area where the National Science Foundation has largely wandered into those areas in recent years, that was a kind of politically correct decision in recent years. And that is a place where the science budgets can be rescoped. We think that the concentration ought to be in those areas of the physical sciences. We also looked at the Critical Technologies account in NSF and believe that to be another one of these areas that is largely a corporate welfare kind of account created in recent years, and decided that was not high priority. So any reductions in spending that you see for NSF reflect those two policy decisions."

Asked what happens to the national laboratories and other components of the Department of Energy if it is abolished, Walker said:

"With the elimination of the Department of Energy, we are looking at the kinds of programmatic savings that we're doing, but we have not decided on a structure. But, specifically, it was raised within the Budget Committee, the idea that some of us have talked about of a Department of Science. The Committee decided that it wanted to be in a position of eliminating departments, not creating a new one, at least in so far as this budget was concerned.

"The Department of Science remains, though, an open question, as we get down to the question of how do you do some of these things that are now being done at departments in a rational way," Walker continued. "My guess is as we move toward a [budget] reconciliation package, the Department of Science may come forward again. But the Budget Committee simply made a determination, we are going to talk in terms of the macro figures, and we are trying to give some determination.

"We are going to let the authorizing committees figure out the way to rationalize all this," he explained. "And my guess is the Department of Science is one of the ways we can seek to rationalize it, but that is not assumed in the budget. Those decisions, which are kind of the micro-management decisions, are very much going to be questions that this [the Science] Committee, other committees of jurisdiction are going to have to address, as well as the appropriators."

With the adoption of the budget resolutions, the action now shifts to the appropriations process. The chairmen of each of the 13 appropriations subcommittees in each house—the so-called colleges of cardinals—will vote on dividing up the grand total in the budget resolutions. And then the subcommittees will determine how much goes to each agency in their jurisdictions.

The passion for cutting is strong and probably irresistible. But when it comes to the details of what gets cut and how much, many battles remain to be fought.—DSG

Exemptions from Mayhem

Spending reductions are the main theme in the House and Senate budget resolutions, but here and there, the legislators made exceptions.

The Senate resolution, for example, "assumes full funding for the Centers for Disease Control and Prevention and the Food and Drug Administration (except for new construction)." The resolution also assumes full funding for the Indian Health Service, the Substance Abuse and Mental Health Services Administration, "and for all AIDS and HIV-related programs."

The directives for NIH under the resolutions are a bit opaque. The Senate version says nothing directly about NIH, leaving the impression it is to share in departmental spending cuts. The House resolution aims to "Encourage Prioritization of NIH-Supported Research by Five Percent."

NIH officials say that with a current budget of $11.5 billion, that could translate into a lot of grants not awarded.

. . . Gibbons: NIH Can't Expect Big Gains of the Past

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their present financial levels.

Gibbons. In the scenarios that are being played. But depending on how much an agency has an opportunity to increase its productivity, it's a question that's up in the air. For instance, if you look at the Science Foundation, over 95 percent of their money goes out to the universities. There's not much more they can do. The same with NIH.

SGR. *Where would the savings be?*

Gibbons. The economies for those agencies would have to come right out of their programs. We hope that some of the economies, however, can come by working with the grantees in regulatory reform, administrative-overhead burden reform, so that a greater fraction of the researcher's time is spent at the bench, rather than having to do busy work.

SGR. *The universities say that indirect costs have been ratcheted down again and again, and that they're at the point where they can't afford any more.*

Gibbons. I think indirect costs are a real problem, because they have ratcheted them down. But we're hoping that they can ratchet them further, especially if we make it easier for them. And that's where our regulatory reform is coming in. We're trying to make it simpler, trying to do more stuff by computer, trying to reduce the paperwork load. If we can do that, then their real research costs will drop, and that means that the federal government's costs can drop.

SGR. *The biomedical research community feels unloved by this Administration.*

Gibbons. The issue is how can they regear themselves to a time which we've been talking about for two years now, of playing zero-sum games, a time in which annual increases of 4,5,6 percent—which have become almost an expectation of the future—are no longer a reality, at least for some interregnum here. And that's tough. I'm concerned about the extent to which we can work out with Congress a reasonable way to sustain strong support for basic science and for the people who want to enter it.

SGR. *Congress is doing its own cutting. But the biomedical community feels left out in this Administration's priorities. NSF has been budgeted for substantial growth while money for NIH has been sluggish.*

Gibbons. If you take a running average over, let's say, the past three or four years, those two have been pretty much parallel. There's very little difference if you time-average it.

SGR. *Maybe so. But in the budgets drawn up by the White House, the favor has clearly been in the direction of NSF as compared to NIH.*

Gibbons. What we're looking at is outcome—that's the most important thing.

SGR. *The outcome in Congress?*

Gibbons. The outcome of the process in the Executive-Legislative deliberations on these things.

SGR. *Are these budgets written in anticipation of how Congress will respond?*

Gibbons. In reality you have to think about that.

SGR. *Then, the small increases are offered in the expectation that Congress will favor NIH?*

Gibbons. History shows that Congress always wants to bump [increase] some things and not bump others. And if we have a set of priorities that say, across the board, we want to give strong support to science, that we want some degree of equilibration between the life sciences and the physical and other sciences, then you have to take that into account. I don't believe there's ever been a conscious effort to say, well, we'll ask for less in this area because we know Congress will bump it up. But it's bound to influence the way you approach it.

SGR. *The Republicans want to kill several of Clinton's favorite programs, including the Advanced Technology Program in Commerce and the Technology Redevelopment Project in Defense.*

Gibbons. They have a theological predilection against the people, that is, the government, doing any kind of partnering with the private sector. Even if there's a clear parallel and mutually complementary interest in the outcome, like technologies directly related to environmental quality and that sort of thing. And so, they've just gone across the board and tried to zero those things out. I noted last week in the *Washington Post* great concern raised by 16 CEOs about research in general. Not only the traditional, fundamental peer-reviewed science stuff that's mostly at universities, but also about a lot of these cooperative programs, where the government money is leveraged by private money in the same area, and you get more bang for your buck. They're trying to zero that.

They've zeroed out the OTA [Congressional Office of Technology Assessment, where Gibbons served as Director for 14 years until moving to the President's staff at the start of the Clinton Administration]. It's as though not having access to knowledge somehow is going to help you in this very challenging time of picking and choosing very carefully.

SGR. *The Heritage Foundation and others say the analytical capability of the country has developed to the point where you can buy this on the outside.*

Gibbons. They're just plain wrong. They don't know what they're talking about. You can't buy the stuff on the outside. You can't buy the process that those people put in place. You can buy some of the science. But those things are far more than just the science. They move science toward policy options. Heritage is superficial in their response.

SGR. *How effective a response is being mounted by your friends in the scientific community to what they all seem to regard as a serious threat to their support?*

Gibbons. Industry has been coming forward, not surprisingly, by first saying, cut our taxes. That's on their books immediately. But they've been strongly supportive of these cooperative programs and the fundamental science work. They understand that without the fundamental science un-

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. . . Universities Yet to Respond to Threats in Budget

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derpinning things, the future of the game for the US future is off.

The extent to which the non-profit and university research community is weighing in on these issues is yet to be fully calibrated. I would hope they will read carefully the way these budgets come out. And as the debates are framed and hearings are held, that they will come forward with their convictions. If you have a Congressional committee that's being hounded by veterans, by housing people and construction people and all sorts of other people, and if there's another agency fighting for those same dollars, such as the Science Foundation, and no one shows up or writes letters, then guess who's going to get the attention.

SGR. *Your speech last month to the American Association for the Advancement of Science sounded like a call to arms.*

Gibbons. I tried to raise a very bright yellow flag, that what I saw coming was not only tough—the Administration's situation alone makes it tough for us. But to look at the way Congress was moving. It is attempting cuts for cuts' sake, and they want to do it so quickly that they're throwing a lot of babies out with the bath water. I saw that as a grave concern to me and my colleagues in the Administration. And I thought the community ought to really sit up and take notice of what I feel they're going to have to contend with.

SGR. *The Space Station seems to be immune.*

Gibbons. [NASA Administrator] Dan Goldin sharpened his pencil about as sharp as you can get. He did downsize the Station enormously from where the Bush Administration left it. We internationalized it and have ended up with a much stronger program than was there before for a whole lot fewer dollars. And now it's not just a technology-pull program or just a science program. It's also a US-Russia program. And so the value of the Station now has to be distributed over about four or five ways of seeing the returns. And it's because of that multiplicity of returns that the President feels very strongly it ought to be protected.

SGR. *If it has a foreign-policy rationale, why doesn't the State Department or the Agency for International Development [AID] kick in some money?*

Gibbons. State is not in the space business.

SGR. *It's in the foreign relations business.*

Gibbons. Yes, and State highly values this. But are you saying that State ought to contribute to it financially?

SGR. *If there is a foreign-policy rationale to the Space Station, why should NASA pay the whole cost for the US government? Why not AID?*

Gibbons. It just hasn't struck me that we should go to the little agency that's trying to help build certain little countries up in their very basic economies and have them help NASA build the Station.

SGR. *There seems to be a new reluctance on the part of our original European partners in the Space Station.*

Gibbons. We've had on-again, off-again from a lot of people over the years. International science is hard at best, and we've had some concerns from time to time on the part of Canada, Italy, and the US itself. Remember, at one point, it passed by only a one-vote margin in Congress. We've made the Station so that it is not a make-or-break on any one player, except the US. We've done this with agreement with Congress that we would not become so dependent on one or another of our partners that it would make or break the thing. I'll be meeting with some of the science ministers from the G-7 here this weekend. But my impression from my conversations with these people over the last six months is that we all have our usual problems of squeezing hard on dollars, but there's nothing new there.

SGR. *Where do we stand on providing money for the Large Hadron Collider [LHC, the big new project at CERN, the European Center for Nuclear Research, near Geneva]?*

Gibbons. The extent to which the US would invest in the capital facility itself would depend on whether or not we could work out a *quid pro quo* on European investment in similar kinds of very large equipment in the US. Whether we have an international *quid pro quo* about the use of each other's major capital investments in research facilities.

SGR. *Is the formula that we'll provide capital for the Large Hadron Collider if they will commit themselves to our next big machine?*

Gibbons. That's part of the discussion.

SGR. *What's our next big machine?*

Gibbons. We have the very large neutron factory. The preferred site is Oak Ridge [National Laboratory, in Tennessee]. The site hasn't been chosen. The very bright light sources, our own high-energy accelerators, at Fermi Lab and at Stanford. And international fusion stuff. And other machines and other large activities that are going on. And the Space Station is another example of an international investment in capital as well as in experimentation.

SGR. *Are we hinging capital assistance for the LHC on some sort of commitment about our next mega-project?*

Gibbons. I don't know that we've said that it's a commitment at this point, but what we're saying is that if they want to talk about our investing and helping with the machine, then we also ought to have a full agreement on that and a *quid pro quo* for things here.

SGR. *What is the size of the commitment we're talking about for CERN?*

Gibbons. What we have in our own high-energy physics and particle physics program in the US runs about $640 million a year now. What we're talking about for CERN and that operation is a fraction of that, maybe a third, maybe a half of it.

SGR. *Would this be taken from the domestic program?*

Gibbons. This would not be diverted from our domestic program. We already have 400 or 500 people over there.

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. . . Don't Expect Industry to Fill in For Federal Cuts

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There's obviously some money flowing over there already. The reason I hedge on this a bit is these are still discussions ongoing right now. So, there are no hard numbers on the table.

SGR. *With the many billions that we've spent on fusion over the past couple of decades, is it conceivable that we would withdraw from this field?*

Gibbons. I think anything is conceivable in this day and time. But we established a study group under the PCAST [President's Committee of Advisors for Science and Technology] which is looking at the magnetic fusion issue, both national and international. It's due to report back to the PCAST and the President in late June. I believe the Department of Energy has some other studies going on, and of course, the [proposed] National Ignition Facility and the inertial fusion work is also being looked at.

I think one can argue that the investment in fusion has brought us to the point now where there are very few big surprises left. It used to be that every time you built a new machine, my god, things worked very differently from the way you thought. Nowadays, when you build a big machine, it works, if not even better than we calculated. The recent stuff at Princeton reaffirms this. The assurance that we're beginning to understand the basic physics is growing stronger, which means you can put more money on the nose of that horse, because you understand the horse better.

On the other hand, if you think about the time to which we need fusion power, it's highly leveraged on the future of fission, on the global greenhouse issues and how much fossil fuels we have left, and on the extent to which we can use renewable resources, whose costs are coming down rather remarkably. So, fusion isn't an isolated decision, but one that has to be made in the context of our long-term overall energy investments. I think our fusion investments have been a good investment. They've brought us to a much greater sense of reality about what the option does offer basically to our grandchildren. We do know that other countries are continuing their commitments, and that we are becoming less and less of a major partner in the international fusion work. And we only want to be so far behind other countries in these advanced technologies.

SGR. *Do you think there's realism to [House Science Committee] Chairman Walker's belief that other sources of support in our $7 trillion economy can be found for science and technology to replace government funding?*

Gibbons. The $7 trillion economy creates, among other things, the federal government's resources. And the people for about two centuries now have taken some of those resources and put them into a collective generation and pursuit of knowledge.

SGR. *Walker says that as the government withdraws support from universities, industry will come in, if it's given the proper tax incentives.*

Gibbons. It might be that for every $3 in taxes you cut, 50 cents of it might go to universities, and the other $2.50 stays at the wish of the industry. I don't think there's any evidence out there that says, you cut our taxes and we'll be charitable and send some of this back to universities for basic research. If there is much evidence there, I'd sure like to see it. On the other hand, if you talk to industrialists today, especially those that are the leaders of American industry with a technological base, they are saying it won't happen, it's a silly idea, and if you take that route, you're going to kill the goose that has been laying golden eggs for 40 years. There is some industry aid for universities, and we ought to encourage every bit of it that we can. But the notion that somehow we can just willy-nilly cut off research and then somehow that vacuum will be filled by the charity of industry, that's under enormous competitive pressures these days, is wishful thinking.

SGR. *The Republicans raise an interesting question about "corporate welfare" when they ask why IBM, Ford, AT&T, etc., are getting funds from the Advanced Technology Program [ATP] and the Technology Reinvestment Project [TRP]. These companies spend billions on R&D.*

Gibbons. We're picking areas where, if we're successful, the resulting technology will be applicable broadly in American industry and enable us to be more competitive. It's the breadth of the applicability of the technology that we're aiming to develop that is the basis for choice. So, to that extent, there is enormous public value in making that investment. We're after the stuff that can't be captured sufficiently to attract that capital without some kind of a partnership.

SGR. *But if these research projects are of such great potential value, why does a wealthy corporation require a bit of subsidy from the feds to pursue its own interest? If they don't want to do it on their own, it's not Washington's role to prevent them from committing suicide.*

Gibbons. As far as I can determine, the things that we're doing through ATP and TRP simply would not be pursued or at least would not be pursued with the same vigor if there weren't some public funding going on there. Talk to a couple of the research directors in the industrial community to get their response. I think you'd get a pretty clear signal from them about what they would or would not be doing with their money.

SGR. *In the coming weeks and months in Congress, where would you look for the telltale signs for where things are headed?*

Gibbons. Watch very carefully what happens when things come out of committees and move toward the floor. Because we've already had fair warning from a number of people that whatever comes to the floor, they're going to wade in with a lot of additional things. Floor actions scare me more than committee actions because committee actions have a certain deliberate pace and openness. Floor actions can be things happening in the middle of the night that can scare the hell out of you.

In Print

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From the American Medical Association (AMA):

Code of Medical Ethics: Current Opinions with Annotations (177 pp., $35.95, plus $6.95 for shipping), by the AMA's Council on Ethical and Judicial Affairs, discussion, with accompanying judicial opinions and other writings, on numerous issues of right behavior in the provision of health care and the conduct of research, including patient confidentiality, conflicts of interest, monetary relations, peer review, and so forth.

Order from: American Medical Association, Order Department, PO Box 7046, Dover, Delaware 19903-7046; tel. 1/800-621-8335; fax 312/464-5600.

From the American Enterprise Institute (AEI):

Attitudes Toward the Environment: Twenty-five Years After Earth Day (55 pp., $5), tracks opinion surveys over the years and concludes that "the vast majority of our citizens are environmentalists," but a sense of urgency has gone out of the issue, according to the authors, Everett Carll Ladd, President of the Roper Center for Public Opinion Research and the Institute for Social Inquiry at the University of Connecticut, and Karlyn H. Bowman, a resident fellow at the Institute and former editor of its journal *The American Enterprise*. That bland conclusion seems to be in conflict with an appendix showing phenomenal growth in membership in the major environmental organizations, mostly since 1970: The National Audubon Society, 104,000 to 556,000; Sierra Club, 114,000 to 553,000; World Wildlife Fund, 172,000 to 1 million; Greenpeace, 250 to 1.5 million; the Nature Conservancy, 60,000 to 806,000, and the Wilderness Society, 50,000 to 275,000.

Order from: AEI Press, c/o Publisher Resources, Inc., 1224 Heil Quaker Blvd., PO Box 7001, La Vergne, Tenn. 37086-7001; tel. 1-800/937-5557; fax 1-800/PRI-ORDER. Outside the US: Eurospan, 3 Henrietta St., London WC2E 8LU, England.

From the RAND Corporation:

The Health Science Program (143 pp., no charge), summarizes projects and publications of the RAND Health Sciences Program, which reports an annual budget of about $13 million, over 100 staff members, and 60 projects. Topics covered include quality of care, health-care financing, medical manpower, maternal and child health, and health services and research methods.

Order from: RAND, Distribution Services, 1700 Main St., Santa Monica, Calif. 90407-2138; tel. 310/451-7002; fax 310/451-6915; Internet: order@rand.org. Abstracts of RAND publications are on the World Wide Web: RAND's URL: http://www.rand.org/

From the Science Policy Research Division of the Congressional Research Service (CRS), part of the Library of Congress, no charge:

The National Information Infrastructure (NII): The Federal Role (IB95051; 15 pp.), updates previous CRS reports on NII, the Clinton Administration's grand design, as the report describes it, "to interconnect industry, Government, research, education, and each home with advanced telecommunications networks and information resources." While House Speaker Gingrich and Vice President Gore share enthusiasm for the goals of NII, the report states, the politics of the program is in flux over private vs. public roles and technological priorities. Meanwhile, Congressional budget cutters have been snipping at the program, for which Clinton has requested nearly $2 billion for the coming fiscal year.

The High Performance Computing and Communications (HPCC) Program: An Introduction (95-272 SPR; 6 pp.), covers the biggest portion of the National Information Infrastructure, summarizing its hardware, software, and research components, and listing the many federal agencies providing support, for a total of $1.1 billion this year. About the same is proposed for next year by the Clinton Administration.

The Global Information Infrastructure (GII) and the G-7 Meeting in Brussels: Issues for Congress (95-532 SPR), reviews discussions at last February's G-7 meeting concerning a worldwide extension of the National Information Infrastructure. Talks on 11 pilot projects established at that meeting are on the agenda for the next G-7, in June in Nova Scotia. The Congressional issues discussed in the report include intellectual property rights, export controls, and user accessibility. Glenn J. McLoughlin wrote the first two CRS reports listed here, and was joined in the third by Marcia S. Smith.

Order these reports through a House or Senate member. Senate switchboard, 202/224-3121; House, 202/225-3121. Cite the Congressional Research Service as the source, with report title and number.

In Print

Official reports and other publications of special interest to the research community

(Copies of publications listed here are available from the indicated sources—not from SGR)

From the Organization for Economic Cooperation and Development (OECD):

Main Science and Technology Indicators: 1994, No. 2 (78 pp., $42 for the two printed editions published each year; also available, for $125, on 5-1/4" and 3-1/2" double-sided, double-density IBM-compatible disks), this is the second in the two-part annual collection of R&D-related data from the 25 OECD nations. The data, supplied by the R&D agencies of the member countries, regularly show up in national debates about the adequacy of research spending as compared to other countries. Topics covered include national R&D expenditures, personnel, shares of activity in academe, industry, and government, support of education, high-tech trade, etc. The text and tables are in English and French.

Order from: OECD Publications and Information Center, 2001 L St. NW, Suite 700, Washington, DC 20036; tel. 202/785-6323; fax 202/785-0350. Also available from booksellers and OECD offices in major cities around the world.

From the American Association for the Advancement of Science (AAAS):

Guide to the Science and Technology Committees of the 104th Congress (35 pp., $5, plus 80 cents for shipping), compiled by the AAAS Center for Science, Technology, and Congress, gives the names, membership, addresses, phone and fax numbers of the many Congressional committees with S&T jurisdictions. Since the discreetly unstated intent is to encourage pro-science lobbying, it is unfortunate that the *Guide* names the committees without identifying their jurisdictions, which are not always evident from committee titles. (The NSF and NASA budgets, for example, are handled by the appropriations subcommittees for the Departments of Veterans Affairs, Housing and Urban Development, and Independent Offices; most government research programs, in Defense, NIH, and Agriculture, are outside the jurisdiction of the House Science Committee.) For those unfamiliar with the organizational peculiarities of Congress, the *Guide* could have been better with little more effort. Financed by the Carnegie Corporation of New York, the AAAS Center for Science, Technology, and Congress also publishes ***Science and Technology in Congress***, an eight-times-a-year newsletter (free of charge) that it is yet to recognize that news, unlike wine, does not improve with age.

Impacts of the Early Cold War on the Formulation of US Science Policy: Selected Memoranda of William T. Golden (97 pp., $14.95, plus $2 for shipping), a bonanza for students of science policy in the early post-war period, as seen through the memos and notes on conversations with politicians and science statesmen by William T. Golden, a long-time White House advisor and architect of relations between science and government. The period covered coincided with the early days of the Korean War, when Golden, a New York financier who moved in and out of government service, advised the Bureau of the Budget on science and national security, the startup of the NSF, and the organization of White House science advice. The volume includes an insightful appreciation of Golden and historical perspective by William A. Blanpied, of the NSF staff.

Order from: AAAS, Center for Science, Technology, and Congress, 1333 H St. NW, Washington, DC 20005; attn. Bonnie Cassidy; tel. 202/326-6798; fax 202/289-4950; e-mail: bcassidy@aaas.org

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From the National Science Foundation, Division of Undergraduate Education:

Profiles of Innovative Projects (NSF 95-71; 50 pp., no charge), brief descriptions of 50 NSF-supported projects rated outstanding by the Foundation for improving undergraduate science, engineering, math, and social-science courses for majors in those fields as well as for other students. Principal investigators for each project and the dates of NSF support are listed.

Order from: NSF, Publications Office, Room P-15, Arlington, Va. 22230; tel. 703/306-1130; fax 703/644-4278.

From the Congressional Office of Technology Assessment (OTA):

Nuclear Safeguards and the International Atomic Energy Agency (IAEA) (summary of a forthcoming report, 22 pp., no charge), says the IAEA system of inspections and accounting of nuclear materials is a useful first-line of defense against nuclear-weapons proliferation, but cautions that the safeguards are porous and need substantial strengthening to fulfill their objective. Cited as examples of evasion are the covert weapons program operated by Iraq in parallel to its IAEA-inspected civilian power program, and North Korea's weapons program, which the agency is credited with exposing. The main limiting factor in preventing proliferation, OTA says, "is the extent to which the states that subscribe to nuclear safeguards are willing to cede additional sovereignty to the IAEA." The report, requested by the Senate Foreign Relations Committee, was released in summary form in April in conjunction with the UN Conference on extension of the Nuclear Non-Proliferation Treaty. The full OTA report is on the way; publication date not set.

Order the summary from: Office of Technology Assessment, US Congress, Washington, DC 20510-8025; tel. 202/228-6204; fax 202/228-6218.

Other Approaches to Civil-Military Integration: The Chinese and Japanese Arms Industries (GPO Stock No. 052-003-01408-4; 41 pp., $3.75), discusses high-tech industrial policies in the two countries in the context of the Pentagon's efforts to obtain more of its goods from the US civilian industrial base.

Order from: New Orders, Superintendent of Documents, PO Box 371954, Pittsburgh, Pa. 15250-7954; tel. 202/512-1800; fax 202/512-2250.

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